

Listing of Claims

The following listing of claims is intended to supercede all previously filed listings of claims. Changes are shown with deletions in ~~striketrough~~ and additions underlined. Kindly enter the following amendments to the claims:

1. (Currently Amended) A method, comprising the steps of:
forming a glass article from molten glass, the glass having an annealing point temperature;
dipping the formed glass article in a molten salt bath for for about 10 seconds or less, the salt bath comprising potassium ions wherein the surface temperature of the glass article is at least the annealing point temperature of the glass during the dipping step; and
maintaining the glass article at a temperature between the strain point temperature of the glass and about 150°C below the strain point temperature for at least about five minutes.
- 2 – 5. (Cancelled)
6. (Original) The method of Claim 1, wherein the glass article is dipped in the salt bath for between about 3 and 5 seconds.
7. (Original) The method of Claim 1, wherein the salt bath comprises potassium nitrate and potassium chloride.
8. (Original) The method of Claim 7, wherein the potassium nitrate is in the range of 40-60 mol% and the potassium chloride is in the range of 40-60 mol%.
9. (Original) The method of Claim 1, wherein the salt bath comprises potassium sulfate and potassium chloride.
10. (Original) The method of Claim 1, wherein the salt bath comprises a combination of at least two of potassium nitrate, potassium chloride, and potassium sulfate.
11. (Original) The method of Claim 1, wherein the salt bath comprises a combination of at least two of potassium nitrate, potassium chloride, and potassium sulfate, the combination having a melting point of at least 550°C.
12. (Original) The method of Claim 1, wherein the salt bath has a temperature of between about 550°C and about 750°C.

13. (Original) The method of Claim 1, wherein maintaining the glass article is at a temperature between the strain point temperature and about 130°C below the strain point temperature.

14. (Original) The method of Claim 1, wherein the strain point temperature is about 530°C.

15. (Original) The method of Claim 1, further comprising:

flame polishing the glass article prior to dipping the glass article in the salt bath.

16. (Original) The method of Claim 1, further comprising:

after the step of maintaining, cooling the glass article, removing residual salt from the glass article and applying a protective scuff resistant coating to the surface of the glass article.

17 – 45. (Cancelled)

46. (Currently Amended) A method for strengthening a glass article, comprising:

forming the glass article from molten glass, the glass having an annealing point temperature;

applying potassium ions to the surface of the glass article, wherein the surface temperature of the glass article is at least the annealing point temperature of the glass during the applying step, the applying step is about 10 seconds or less; and

maintaining the glass article at a temperature between the strain point temperature of the glass and about 150°C below the strain point temperature for at least about five minutes.

47 – 48. (Cancelled)

49. (Original) The method of Claim 46, wherein the step of applying the potassium ions to the surface of the glass is accomplished by dipping the glass article in a salt bath for between about 3 and about 5 seconds.

50. (Original) The method of Claim 46, wherein the step of applying potassium ions to the surface of the glass article is accomplished by spraying potassium ions on the surface of the glass article.

51. (Original) The method of Claim 50, wherein spraying comprises flame spraying.

52. (Original) The method of Claim 50, wherein the spraying comprises electrostatic spraying.

53. (Original) The method of Claim 50, wherein the spraying step comprises power spraying.

54. (Original) The method of Claim 46, wherein the step of applying potassium ions to the surface of the glass article is accomplished by chemical vapor deposition (CVD).

55. (Original) The method of Claim 46, wherein the glass article is at a temperature of at least about 25°C above the annealing point of the glass during the applying step.

56. (Original) The method of Claim 46, wherein the glass article is at a temperature of at least about 50°C above the annealing point of the glass during the applying step.

57. (Original) The method of Claim 46, wherein the surface of the glass article is at a temperature of at least about 80°C above the annealing point of the glass during the applying step.

58. (Original) The method of Claim 46, wherein maintaining the glass article is at a temperature between the strain point and about 130°C below the strain point.

59. (Original) The method of Claim 46, wherein the strain point temperature is about 530°C.

60. (Withdrawn) The method of Claim 46, further comprising:
after the step of maintaining, applying a protective scuff resistant coating to the surface of the glass article.

61. (Currently Amended) A method, comprising:
forming a glass article from molten glass;
dipping the formed glass article in a salt bath for about 10 seconds or less, the salt bath comprising potassium ions, the glass articles being dipped for less than about 30 seconds;
and

maintaining the glass article at a temperature between the strain point temperature of the glass and about 150°C below the strain point temperature for at least about five minutes.

62 – 63. (Cancelled)

64. (Original) The method of Claim 61, wherein the glass article is dipped in the salt bath for between about 3 and about 5 seconds.

65. (Original) The method of Claim 61, wherein the salt bath comprises potassium nitrate and potassium chloride.

66. (Original) The method of Claim 65, wherein the potassium nitrate is in the range of 40-60 mol% and the potassium chloride is in the range of 40-60 mol%.

67. (Original) The method of Claim 61, wherein the salt bath comprises potassium sulfate and potassium chloride.

68. (Original) The method of Claim 61, further comprising:

flame polishing the glass article prior to dipping the article in the salt bath.

69. (Original) The method of Claim 61, further comprising:

after the step of maintaining, applying a protective scuff resistant coating to the surface of the glass article.

70. (Original) The method of Claim 61, wherein the salt bath has a temperature of between about 550°C and about 750°C.

71. (Original) The method of Claim 61, wherein maintaining the glass article is at a temperature between the strain point temperature and about 130°C below the strain point temperature.

72. (Original) The method of Claim 61 wherein the strain point temperature is about 530°C.

73. (New) A method, comprising the steps of:

forming a glass article from molten glass, the glass having an annealing point temperature;

preheating the glass article to a preheating temperature;

dipping the formed glass article in a molten salt bath having a temperature more than said preheating temperature and the salt bath comprising potassium ions wherein the surface temperature of the glass article is at least the annealing point temperature of the glass during the dipping step; and

maintaining the glass article at a temperature between the strain point temperature of the glass and about 150°C below the strain point temperature for at least about five minutes.

74. (New) The method of Claim 73, wherein the temperature of the salt bath is at least about 25° C above the preheating temperature.

75. (New) The method of Claim 73, wherein the glass article is dipped in the salt bath for less than about one minute.

76. (New) The method of Claim 73, wherein the glass article is dipped in the salt bath for about 10 seconds or less.

77. (New) The method of Claim 73, wherein the glass article is dipped in the salt bath for between about 0.5 and about 30 seconds.

78. (New) The method of Claim 73, wherein the glass article is dipped in the salt bath for between about 3 and about 5 seconds.

79. (New) The method of Claim 73, wherein the salt bath comprises potassium nitrate and potassium chloride.

80. (New) The method of Claim 73, wherein the potassium nitrate is in the range of 40-60 mol% and the potassium chloride is in the range of 40-60 mol%.

81. (New) The method of Claim 73, wherein the salt bath comprises potassium sulfate and potassium chloride.

82. (New) The method of Claim 73, wherein the salt bath comprises a combination of at least two of potassium nitrate, potassium chloride, and potassium sulfate.

83. (New) The method of Claim 73 wherein the salt bath comprises a combination of at least two of potassium nitrate, potassium chloride, and potassium sulfate, the combination having a melting point of at least 550°C.

84. (New) The method of Claim 73, wherein the salt bath has a temperature of between about 550°C and about 750°C.

85. (New) The method of Claim 73, wherein maintaining the glass article is at a temperature between the strain point temperature and about 130°C below the strain point temperature.

86. (New) The method of Claim 73, wherein the strain point temperature is about 530°C.

87. (New) The method of Claim 73, further comprising:

flame polishing the glass article prior to dipping the glass article in the salt bath.

88. (New) The method of Claim 73, further comprising:

after the step of maintaining, cooling the glass article, removing residual salt from the glass article and applying a protective scuff resistant coating to the surface of the glass article.